SANFORD GUIDE

Antimicrobial Therapy, Inc
Sperryville, VA

Content Delivery API Specification

Document Version 1.5
In the era of antimicrobial resistance, it is increasingly vital to prescribe the right drug in the right dose for the right duration. As one of the first antimicrobial stewardship tools developed, Sanford Guide has aided in this effort for half a century, and continues to expand our content to support appropriate use of antimicrobials.

The Sanford Guide API provides a simple and convenient way to integrate industry-leading Sanford Guide content into your EHR, CDS, LIT, Surveillance, or other Health-care IT platform. Use our content-delivery service to query the full suite of Sanford Guide content and deliver concise treatment recommendations optimized for use at the point of care. We also welcome integration proposals from HIT companies seeking to provide clinically-focused infectious disease treatment recommendations to their users.

For more information, contact:
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Sanford Guide Content Integration

Introduction

Since 1969, The Sanford Guide has been a leading antimicrobial stewardship resource, aiding prescribers in administering antibiotics in an effective, efficient, and responsible manner. Our content is carefully curated for use in clinical settings, providing medical professionals with the information they need to improve patient outcomes, reduce costs, and aid in the stewardship of antimicrobial agents.

It is now possible to integrate Sanford Guide content into your company’s technology platform. Through this integration, users will have the ability to search, navigate, and reference Sanford Guide content without exiting your technology platform. Integrating with Sanford Guide content is as simple as leveraging API services that provide our content to your users. The services currently available are: Full Text Search, Content Map, Content Delivery, Spectra of Activity Map, and Spectra of Activity Pathogen Recommendations.
Full Text Search Service

The full text search service will provide the capability for your users to query Sanford Guide content in a search engine format.

Request Format

<table>
<thead>
<tr>
<th>Field Key</th>
<th>Value Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>search</td>
<td>String</td>
<td><strong>Required:</strong> The user’s search criteria. Can contain multiple words. Can utilize single or double quotes to search for a phrase.</td>
</tr>
</tbody>
</table>

Response Format

<table>
<thead>
<tr>
<th>Field Key</th>
<th>Value Type</th>
<th>Always Appears</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>Number</td>
<td>Yes</td>
<td>The unique ID of the result. This can be used by the content delivery service to retrieve the contents of the given page.</td>
</tr>
<tr>
<td>title</td>
<td>String</td>
<td>Yes</td>
<td>The title of the given page.</td>
</tr>
<tr>
<td>description</td>
<td>String</td>
<td>No</td>
<td>A short description of the given page (if available).</td>
</tr>
</tbody>
</table>

Example:

```
[  
  {  
    "id" : "d936a88eb46866885e57bad60bc28c9e", 
    "title" : "Arthritis, Septic, Staph. aureus"
  },  
  {  
    "id" : "4a3426e0-0abd-4a80-85c9-8f254060e753", 
    "title" : "Kingella kingae"
  },  
  {  
    "id" : "ba5fa3283cd3493db4a71727e757c349e", 
    "title" : "ARV Regimens Not Recommended, ", "description" : "Adult"
  }  
... 
]```
Content Map Service

The content map service will provide the capability for your users to navigate the Sanford Guide content menu structure.

Request Format

<table>
<thead>
<tr>
<th>Field Key</th>
<th>Value Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>String</td>
<td><strong>Optional</strong>: The unique ID of the menu item selected. If one is not provided, then the root menu is returned.</td>
</tr>
</tbody>
</table>

Response Format

<table>
<thead>
<tr>
<th>Field Key</th>
<th>Value Type</th>
<th>Always Appears</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>String</td>
<td>Yes</td>
<td>The unique ID of the menu object.</td>
</tr>
<tr>
<td>title</td>
<td>String</td>
<td>Yes</td>
<td>Should be displayed as the navigation title when viewing this menu object.</td>
</tr>
<tr>
<td>children</td>
<td>Array</td>
<td>Yes</td>
<td>An array containing items that either lead to a deeper menu or to a particular content page.</td>
</tr>
<tr>
<td>children[x]. id</td>
<td>String</td>
<td>Yes</td>
<td>The unique ID of the child object.</td>
</tr>
<tr>
<td>children[x]. type</td>
<td>String</td>
<td>Yes</td>
<td>Will always be either &quot;menu&quot;, or &quot;page&quot;. Defines whether the menu object is associated with nested menu or a particular content page.</td>
</tr>
<tr>
<td>children[x]. title</td>
<td>String</td>
<td>Yes</td>
<td>The primary display text for the menu object.</td>
</tr>
<tr>
<td>children[x]. description</td>
<td>String</td>
<td>No</td>
<td>The secondary display text for the menu object. Occurs only for pages (does not occur for menus).</td>
</tr>
</tbody>
</table>

Example:

```json
{
    "id": "97ee6cad-fa84-4342-a0cf-e577a94bfd24",
    "title": "Syndromes",
    "children": [
        {
            "id": "2bbaldae59874959b6323d83b22abedf",
            "type": "page",
            "title": "Duration of Therapy",
            "description": "Antibacterial",
        },
        {
            "id": "af59e0d2-83f5-4d18-a1fb-be3366e1bfed",
            "type": "menu",
            "title": "Cardiovascular"
        },
        ...
    ]
}
```
Content Delivery Service

The content delivery service will provide the capability for your users to view a web page containing the content of a given Sanford Guide page.

Request Format

<table>
<thead>
<tr>
<th>Field Key</th>
<th>Value Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>String</td>
<td>Required: The unique ID of the Sanford Guide content page.</td>
</tr>
</tbody>
</table>

Response Format

The response shall be HTML format, and will contain the HTML view of the requested Sanford Guide content page.

Example:

```html
<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml" lang="en" xml:lang="en">
  <head> ... </head>
  <body> ... </body>
</html>
```
### Spectra Map Service

The spectra map service will provide a listing of all agents and pathogens that are displayed within the Sanford Guide Antibacterial Spectra of Activity. For each agent and pathogen, the following data is provided:

- ID – the unique identifier of the agent or pathogen
- Name – the name of the agent or pathogen
- URL – the content delivery service URL for the agent or pathogen
- Comments – Sanford Guide editor commentary about the agent or pathogen

### Request Format

The request will be accessible only via an HTTPS Get. No parameters are required.

### Response Format

The root level object in the response will contain an "agents" and a "pathogens" key. The value for each is an array of objects where each object is either an agent or pathogen.

<table>
<thead>
<tr>
<th>Field Key</th>
<th>Value Type</th>
<th>Always Appears</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>agents</td>
<td>Array</td>
<td>Yes</td>
<td>An array containing all of the agent objects.</td>
</tr>
<tr>
<td>agents[x].id</td>
<td>String</td>
<td>Yes</td>
<td>The unique ID of the agent.</td>
</tr>
<tr>
<td>agents[x].name</td>
<td>String</td>
<td>Yes</td>
<td>The name of the agent.</td>
</tr>
<tr>
<td>agents[x].display_name</td>
<td>String</td>
<td>Yes</td>
<td>The displayed name of the agent within the Sanford Guide Spectra of Activity (null if identical to name).</td>
</tr>
<tr>
<td>agents[x].url</td>
<td>String</td>
<td>Yes</td>
<td>The Content Delivery Service URL for the agent.</td>
</tr>
<tr>
<td>agents[x].comments</td>
<td>String</td>
<td>Yes</td>
<td>Sanford Guide editor commentary about the agent.</td>
</tr>
<tr>
<td>pathogens</td>
<td>Array</td>
<td>Yes</td>
<td>The displayed name of the agent within the Sanford Guide Spectra of Activity (null if identical to name).</td>
</tr>
<tr>
<td>pathogens[x].id</td>
<td>String</td>
<td>Yes</td>
<td>The unique ID of the pathogen.</td>
</tr>
<tr>
<td>pathogens[x].name</td>
<td>String</td>
<td>Yes</td>
<td>The name of the pathogen.</td>
</tr>
<tr>
<td>pathogens[x].display_name</td>
<td>String</td>
<td>Yes</td>
<td>The displayed name of the pathogen within the Sanford Guide Spectra of Activity (null if identical to name).</td>
</tr>
<tr>
<td>pathogens[x].url</td>
<td>String</td>
<td>Yes</td>
<td>The content delivery service URL of the pathogen.</td>
</tr>
<tr>
<td>pathogens[x].comments</td>
<td>String</td>
<td>Yes</td>
<td>Sanford Guide editor commentary about the agent.</td>
</tr>
</tbody>
</table>
Example:

```json
{
  "agents": [
    {
      "id": "e576046eafc64bc64bc5b5c25b8f297dc8cb",
      "name": "Ampicillin-Sulbactam",
      "url": "https://serviceurl?id=dc8...",
      "comments": null
    },
    {
      "id": "1bb2bbc5752a4329bb62048c04f98f60",
      "name": "Dalbavancin",
      "url": "https://serviceurl?id=1bb...",
      "comments": null
    },
    {
      "id": "ce3166c4dbfee4f48a3b4385406b7d0c7",
      "name": "Ceftaroline",
      "url": "https://serviceurl?id=ce3...",
      "comments": null
    },
    ...
  ],
  "pathogens": [
    {
      "id": "2bcf6781541ced7fc323bf951bf94f15",
      "name": "Nocardia sp",
      "url": "https://serviceurl?id=2bc...",
      "comments": null
    },
    {
      "id": "ddc4479a18f2cac84abe3e66d5eaa94",
      "name": "Neisseria gonorrhoeae",
      "url": "https://serviceurl?id=ddc...",
      "comments": null
    },
    {
      "id": "bb74c7b6e6021ec99486ed5e6a96b",
      "name": "Fusobacterium necrophorum",
      "url": "https://serviceurl?id=bb7...",
      "comments": null
    },
    ...
  ]
}
```
Spectra Pathogen Recommendations Service

The spectra pathogen recommendations service provides Sanford Guide Antibacterial Spectra of Activity data for a particular pathogen

Request Format

The request will be accessible only via an HTTPS Get.

<table>
<thead>
<tr>
<th>Field Key</th>
<th>Value Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>String</td>
<td><strong>Required:</strong> The unique ID of a given pathogen that is contained within the Sanford Guide Spectra of Activity.</td>
</tr>
</tbody>
</table>

Response Format

The response object contains the unique ID of the pathogen parameter as well as a “recommendations” array of objects. Each object in the “recommendations” array contains a distinct recommendation type (Recommended, Active, etc.) as well as an “interactions” array of objects. Each object in the “interactions” array contains an agent ID and Sanford Guide editorial commentary regarding the agent/pathogen interaction.

<table>
<thead>
<tr>
<th>Field Key</th>
<th>Value Type</th>
<th>Always Appears</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pathogen_id</td>
<td>String</td>
<td>Yes</td>
<td>The unique ID of the pathogen.</td>
</tr>
<tr>
<td>recommendations</td>
<td>Array</td>
<td>Yes</td>
<td>An array containing all of the recommendation objects.</td>
</tr>
<tr>
<td>recommendations[x].id</td>
<td>String</td>
<td>Yes</td>
<td>Unique text of the recommendation (Recommended, Active, Variable, etc.).</td>
</tr>
<tr>
<td>recommendations[x].symbol</td>
<td>String</td>
<td>Yes</td>
<td>The symbol of the recommendation (++, +, ±, etc.).</td>
</tr>
<tr>
<td>recommendations[x].definition</td>
<td>String</td>
<td>Yes</td>
<td>The definition of the recommendation.</td>
</tr>
<tr>
<td>recommendations[x].interactions</td>
<td>Array</td>
<td>Yes</td>
<td>An array containing all of the interaction objects.</td>
</tr>
<tr>
<td>recommendations[x].interactions[y].agent_id</td>
<td>String</td>
<td>Yes</td>
<td>The unique ID of an agent.</td>
</tr>
<tr>
<td>recommendations[x].interactions[y].comments</td>
<td>String</td>
<td>Yes</td>
<td>Sanford Guide editor commentary regarding the agent/pathogen interaction.</td>
</tr>
</tbody>
</table>
Example:

```json
{
  "pathogen_id": "9af9836c2adbe835f4a8c4de7ea2ba12",
  "recommendations": [
    {
      "id": "Recommended",
      "symbol": "++",
      "definition": "Agent is a first line therapy: reliably... ",
      "interactions": [
        {
          "agent_id": "0cc2935f7dc740f8baa35dc67d50d0a4",
          "comments": null
        },
        {
          "agent_id": "8186eddc4d454f01ae541820945c3969",
          "comments": null
        }
      ]
    },
    {
      "id": "Active",
      "symbol": "+",
      "definition": "Agent is a potential alternative agent...",
      "interactions": [
        {
          "agent_id": "e576046eafc64bc5b5c25b8f297dc8cb",
          "comments": null
        },
        {
          "agent_id": "e7252f94e0c94760807a9bab030be72c",
          "comments": "Do not use Doripenem to treat any kind of..."
        }
      ]
    }
  ]
}
```
About Our Company

Since 1969, Sanford Guide has been a leader in point-of-care recommendations for the treatment of infectious diseases. Content can be accessed through iOS, Android, our API, on the web, and in print. Widely used by pharmacists, physicians, physician assistants, microbiologists, and nurses, Sanford Guide helps to improve patient care by providing carefully curated recommendations based on the latest evidence. Content is updated on an ongoing basis by a team of leading infectious disease experts.

Fast Facts

• Providing accessible, concise, and reliable guidance since 1969
• Licensed for use in over 5,000 facilities worldwide
• Available via iOS, Android, API, and the Web
• Fastest time-to-answer of any major reference covering infectious diseases

www.sanfordguide.com